

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

Claim 1: (currently amended) A nuclear fission reactor comprising:

- a. a core consisting essentially of a powdered fissile metal hydride;
- b. an atmosphere comprising a hydrogen isotope to which said powdered fissile metal hydride is exposed;
- c. a non-fissile material ~~separated~~ positioned separate from said core ~~that~~ where said non-fissile material absorbs and desorbs said hydrogen isotope based on temperature; and
- d. a means for controlling said non-fissile material temperature.

Claims 2 -7: (canceled)

Claim 8: (previously amended) The nuclear fission reactor of claim 1 wherein said powdered fissile metal hydride comprises fissile uranium hydride.

Claims 9-10: (canceled)

Claim 11: (withdrawn)

Claims 12-17: (canceled)

Claim 18: (original) The nuclear fission reactor of claim 1 wherein said non-fissile material comprises a non-fissile metal hydride.

Claim 19: (original) The nuclear fission reactor of claim 18 wherein said non-fissile material comprises a non-fissile uranium hydride.

Claim 20: (canceled)

Claim 21:(original) The nuclear fission reactor of claim 1 additionally comprising a plurality of trays holding said non-fissile material.

Claim 22-24:(canceled)

Claim 25: (previously amended) The nuclear fission reactor of claim 1 wherein said powdered fissile metal hydride comprises at least one fissile actinide hydride.

Claim 26: (currently amended) The nuclear fission reactor of claim 25 wherein said at least one powdered fissile actinide hydride is selected from the group consisting of hydrides of uranium and plutonium.

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Claim 27: (previously amended) The nuclear fission reactor of claim 25 additionally comprising at least one powdered fertile actinide hydride.

Claim 28: (previously amended) The nuclear fission reactor of claim 27 wherein said at least one powdered fertile actinide hydride is selected from the group consisting of hydrides of U^{238} and Th^{232} .

Claim 29: (withdrawn)